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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/035,840

12/31/2001

Hariklia Deligianni

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7590

10/21/2003

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EXAMINER

DONOVAN, LINCOLN D

ART UNIT

PAPER NUMBER

2832

DATE MAILED: 10/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

10/035,840

Applicant(s)

DELIGIANNI ET AL.

Examiner

Lincoln Donovan

Art Unit

2832

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 4,5,12-15 and 17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,6-11,16 and 18-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12-11-01 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the cylindrical shaped heads must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities: applicant must provide a description of figure 2.

Appropriate correction is required.

Claim Objections

Claim 10 is objected to because of the following informalities: in line 1, "and elastomeric" should be corrected as --- an elastomeric --. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-3, 6-11, 16 and 18-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, in line 4, applicant should clarify what contacts are intended. In lines 10-12, applicant should clarify whether the "central elongated member" is the movable part. The structure and arrangement of the "central elongated member" is not clear. Applicant should clarify what is intended by the central elongated member being fixed to a head. The specific arrangement of the electrical contact on the head is unclear.

Regarding claim 3, applicant should clarify the specific design and arrangement of the cylindrical shaped head member.

Regarding claim 7, there is no antecedent basis for "said another side of the part."

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 6-7 and 21-22, as best understood in view of the rejections under 35 U.S.C. 112, second paragraph, are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. [US 6,144,545].

Lee et al. disclose a switch [figure 5] comprising:

- a substrate [50];

- an elongated movable part [53] supporting a contact bridge [54];
- a pair of electrical contacts [56] disposed at one side of the part;
- an actuation electrode [51, 55] disposed at one side of the part and separated from the contacts; and
- wherein the movable part, the contacts and the electrode are disposed on the substrate and the movable part is arranged and dimensioned such that the movable part is movable in a lateral direction generally toward the contacts.

Lee et al. disclose the instant claimed invention except for the specific placement of the actuation electrode.

It would have been obvious to one of ordinary skill in the art at the time the invention was made that the electrode design shown by Lee et al. could have been modified to provide sideways lateral motion.

Regarding claim 6, Lee et al. disclose another pair of electrical contacts disposed at another side of the movable part opposite to the one side.

Regarding claim 7, Lee et al. disclose another electrical contact disposed at the other side of the part opposing the one side of the part.

Regarding claim 21, Lee et al. discloses the movable part being anchored to the substrate at at least one end [figure 5].

Regarding claim 22, Lee et al. disclose an additional pair of contacts at another side of the part [figure 5].

Claims 2, 8-11 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. as applied to claim 1 above, and further in view of Sun [US 6,307,452].

Lee et al. disclose the instant claimed invention except for the elongated member including a thin-film provided on an elongated insulating member.

Sun discloses an actuator [20], for an RF switch, formed of an silicon nitride insulating material having a thin-film conductive coating [column 3, lines 33-47].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a thin-film coated insulator for the movable part and contact head of Lee et al., as suggested by Sun, for the purpose of providing rigidity to the assembly.

Regarding claim 19, Sun discloses the use of Au for electrical contacting members.

Regarding claim 20, to use a highly conductive material, Fe, Au, Ag, Pt, Pd, etc. for the electrodes would have been obvious in order to enhance conductivity.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Au for the contacts of Lee et al., as suggested by Sun, for the purpose of enhancing electrical conductivity.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. as applied to claim 1 above, and further in view of Wang [US 6,506,989B2].

Lee et al. disclose the instant claimed invention except for an insulating layer mounted on the head.

Art Unit: 2832

Wang discloses an armature supporting movable electrode members [28] with an insulating member [32] separating the members.

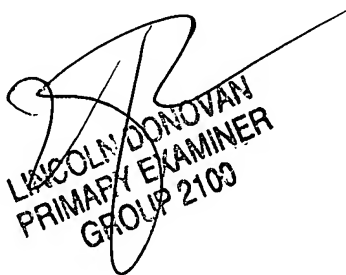
It would have been obvious to one of ordinary skill in the art at the time the invention was made to include an insulating layer in the head of Lee et al., as suggested by Wang, for the purpose providing multiple switching states.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lincoln Donovan whose telephone number is 703 308-3111. The examiner can normally be reached on M-F 8:30-5:00.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1920.

ldd
10/14/03


LINCOLN DONOVAN
PRIMARY EXAMINER
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